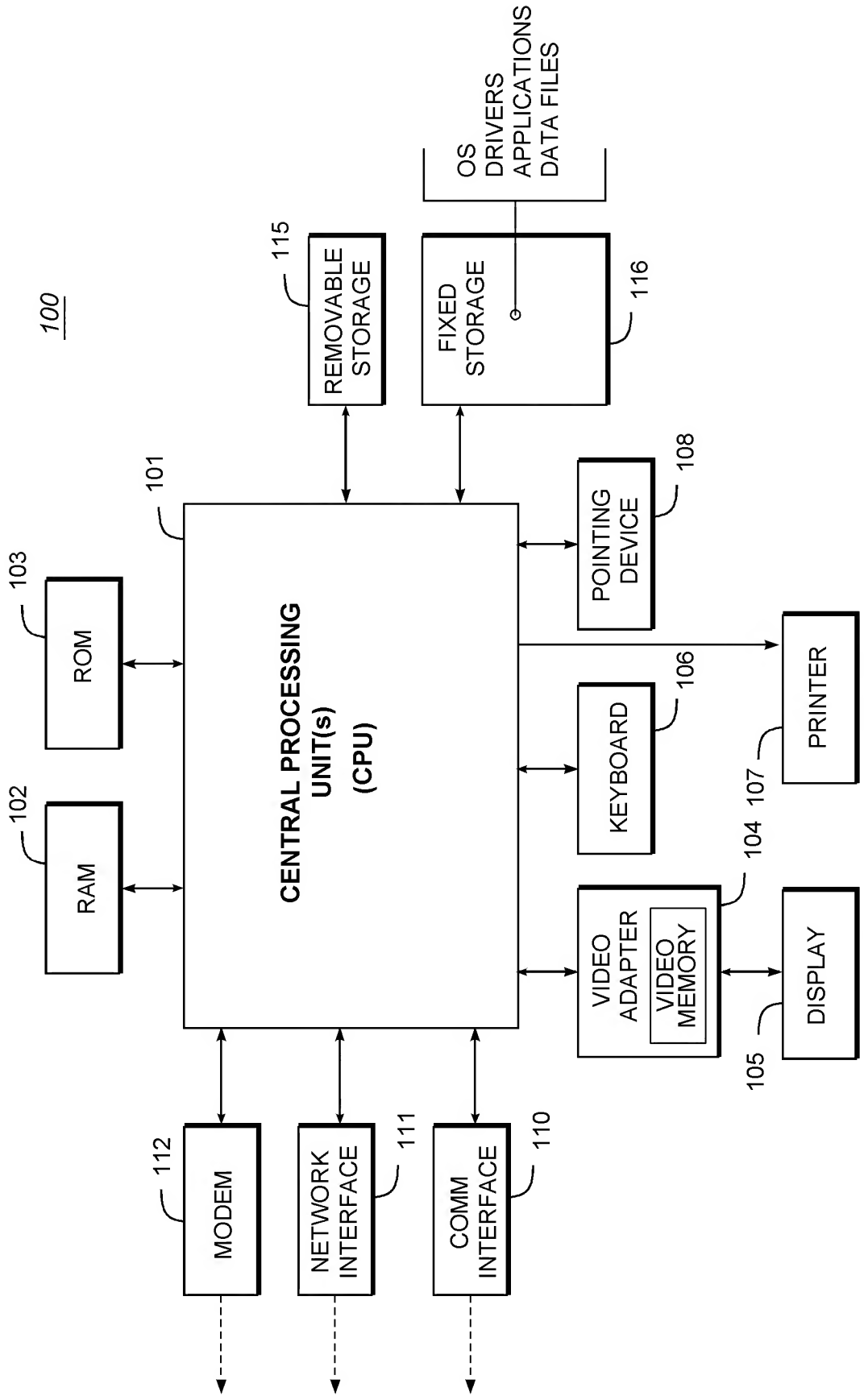

FIG. 1
(PRIOR ART)

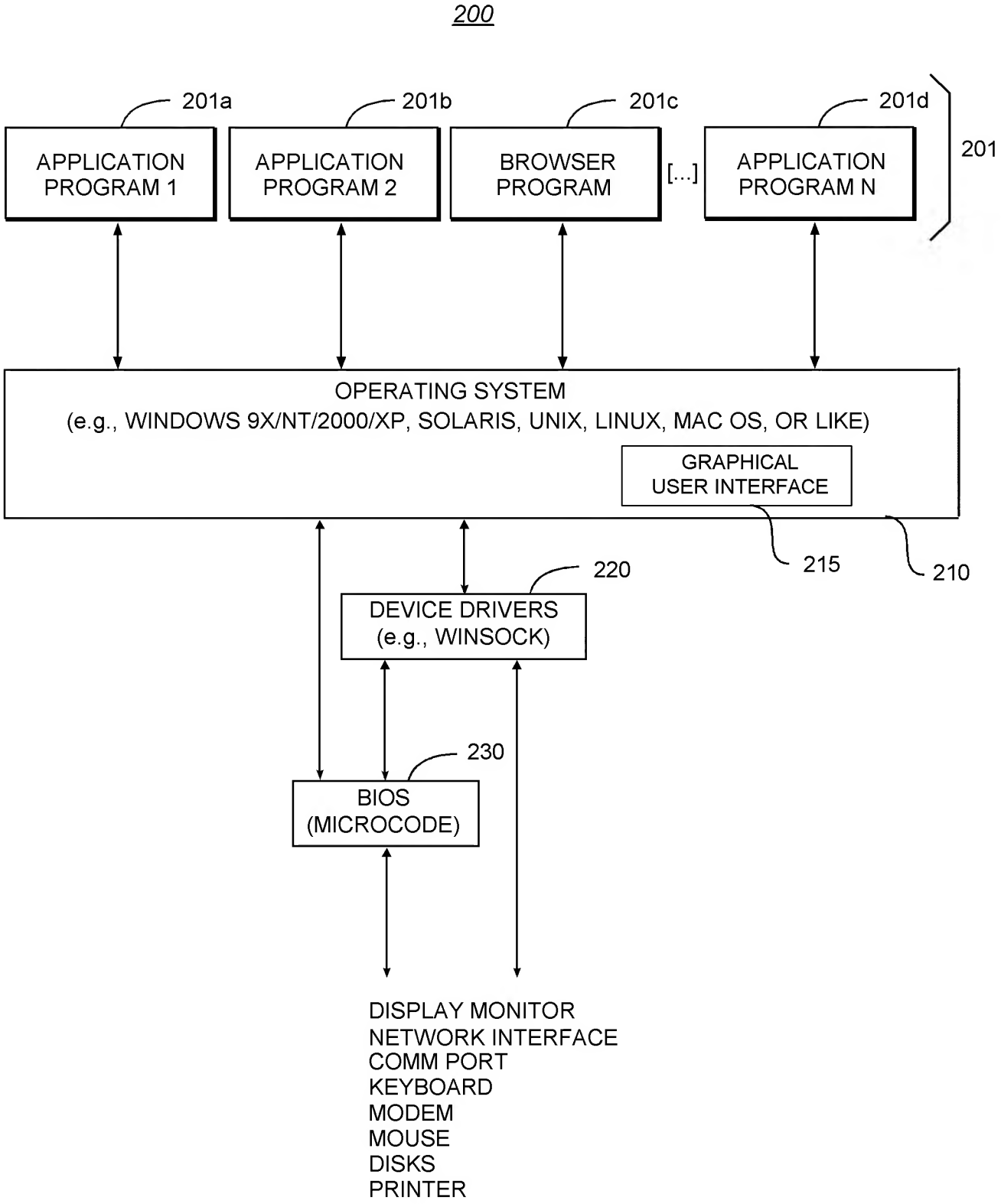
200
201a
201b
201c
201d
201
APPLICATION PROGRAM 1
APPLICATION PROGRAM 2
BROWSER PROGRAM
[...]
APPLICATION PROGRAM N
OPERATING SYSTEM
(e.g., WINDOWS 9X/NT/2000/XP, SOLARIS, UNIX, LINUX, MAC OS, OR LIKE)
GRAPHICAL USER INTERFACE
215
210
220
DEVICE DRIVERS
(e.g., WINSOCK)
230
BIOS
(MICROCODE)
DISPLAY MONITOR
NETWORK INTERFACE
COMM PORT
KEYBOARD
MODEM
MOUSE
DISKS
PRINTER

FIG. 2

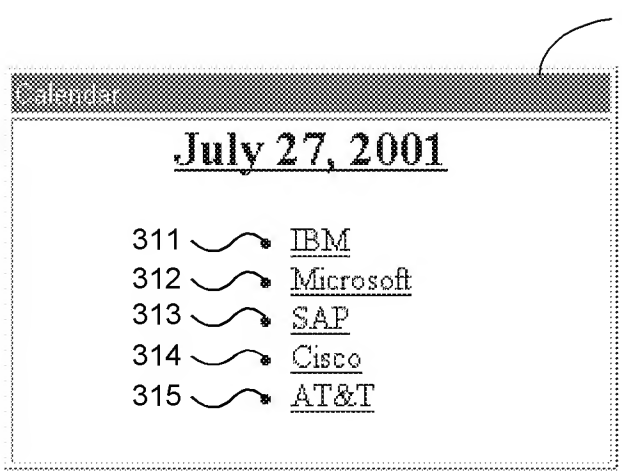
310
Calendar
July 27, 2001
311 IBM
312 Microsoft
313 SAP
314 Cisco
315 AT&T

FIG. 3A

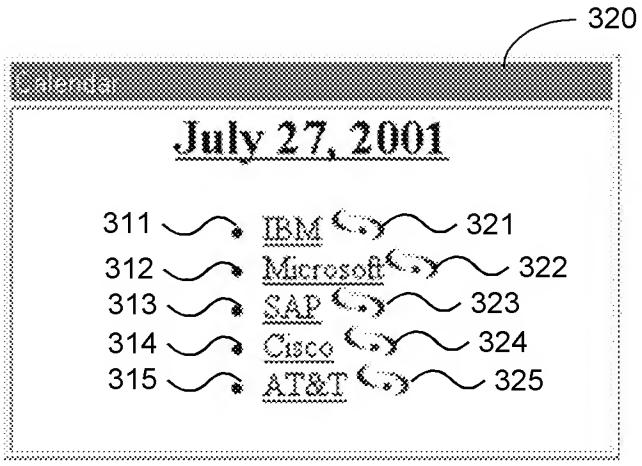
320
Calendar
July 27, 2001
311 IBM 321
312 Microsoft 322
313 SAP 323
314 Cisco 324
315 AT&T 325

FIG. 3B

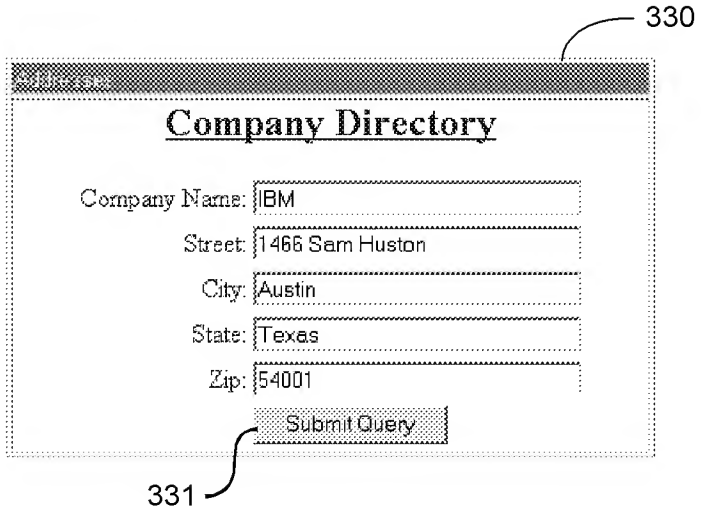
330
Company Directory
Company Name: IBM
Street: 1466 Sam Huston
City: Austin
State: Texas
Zip: 54001
Submit Query
331

FIG. 3C

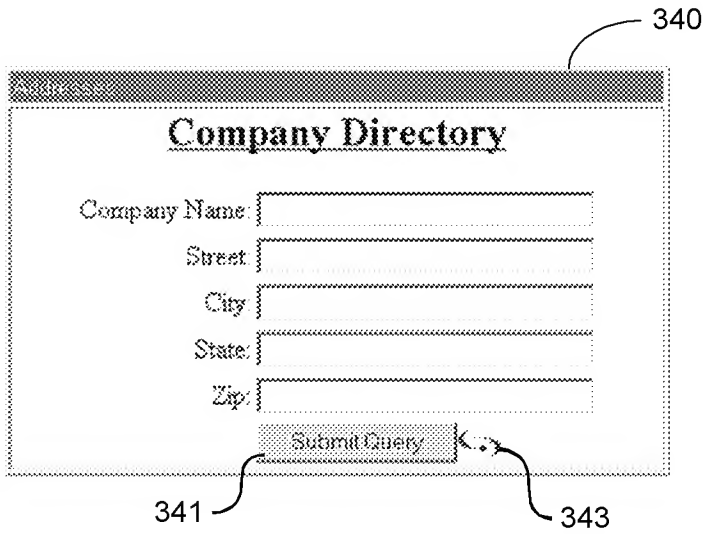
340
Company Directory
Company Name:
Street:
City:
State:
Zip:
Submit Query
341
343

FIG. 3D

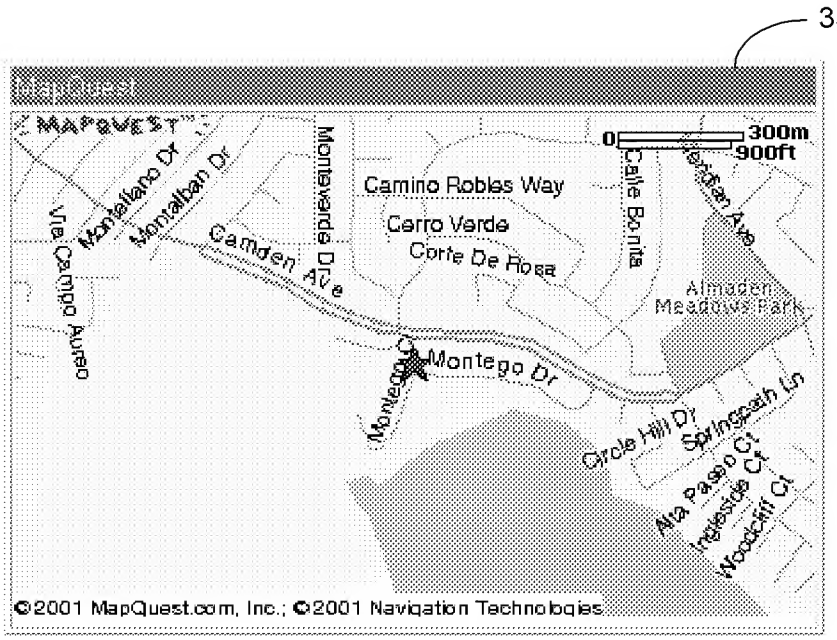
350
MAPQUEST
0
300m
900ft
Montalbano Dr
Montalban Dr
Via Campo Aureo
Camden Ave
Montevarde Dr
Camino Robles Way
Cerro Verde
Corte De Rosa
Calle Bonita
Almaden Meadows Park
Montego Ct
Montego Dr
Circle Hill Dr
Springbath Ln
Alta Paseo Ct
Ingleside Ct
Woodcliff Ct
©2001 MapQuest.com, Inc.; ©2001 Navigation Technologies

FIG. 3E

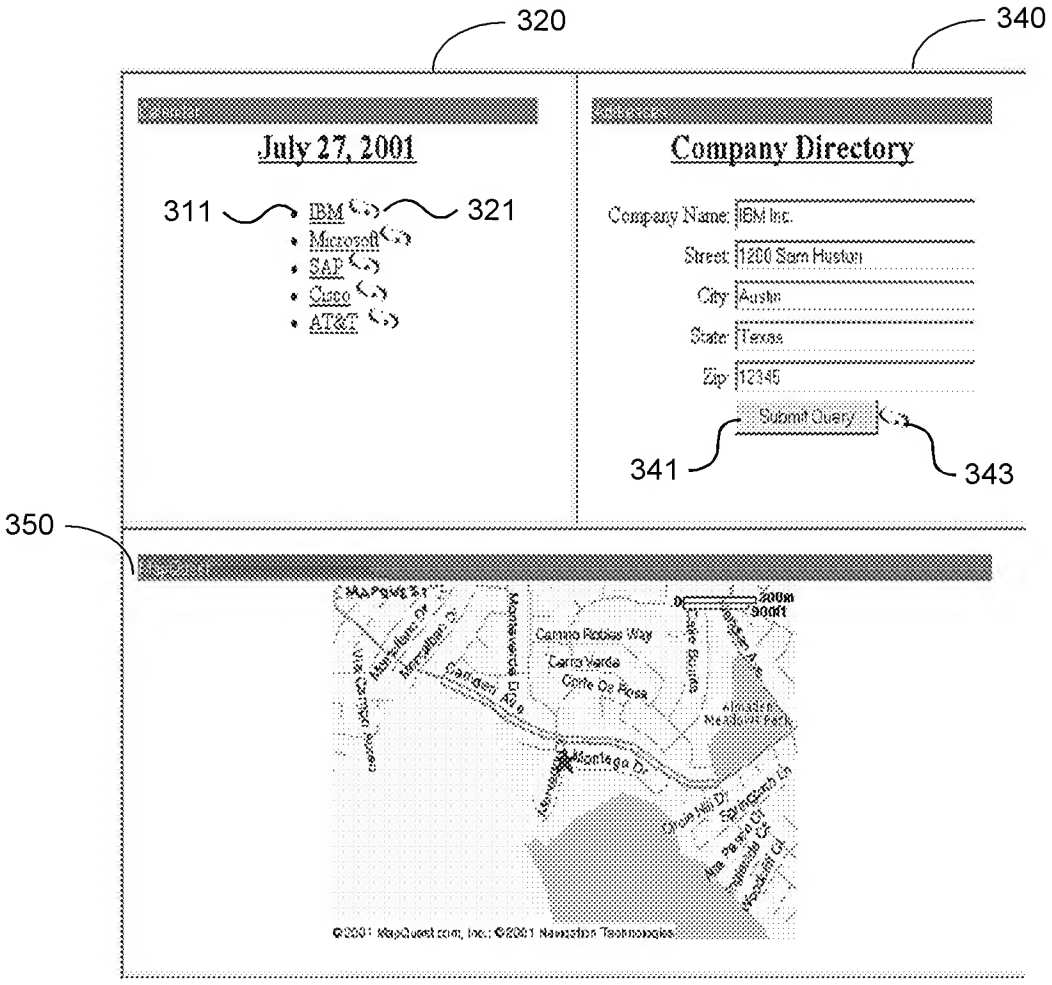
320
340
July 27, 2001
311
IBM
321
Microsoft
SAP
Cisco
AT&T
Company Directory
Company Name: IBM Inc.
Street: 1200 Sam Huston
City: Austin
State: Texas
Zip: 12345
Submit Query
341
343
350
Montego Dr
Camino Robles Way
Camry Verde
Corte De Rosa
Monterey Dr
Mercedes Dr
Cranwood Ave
Marquez Dr
Marquez Ct
Marquez Way
Marquez Cir
Meadowlark Park
Drue Hill Dr
Springcrest Ln
Meadowlark Ct
©2001 MapQuest.com, Inc.; ©2001 Navigation Technologies

FIG. 3F

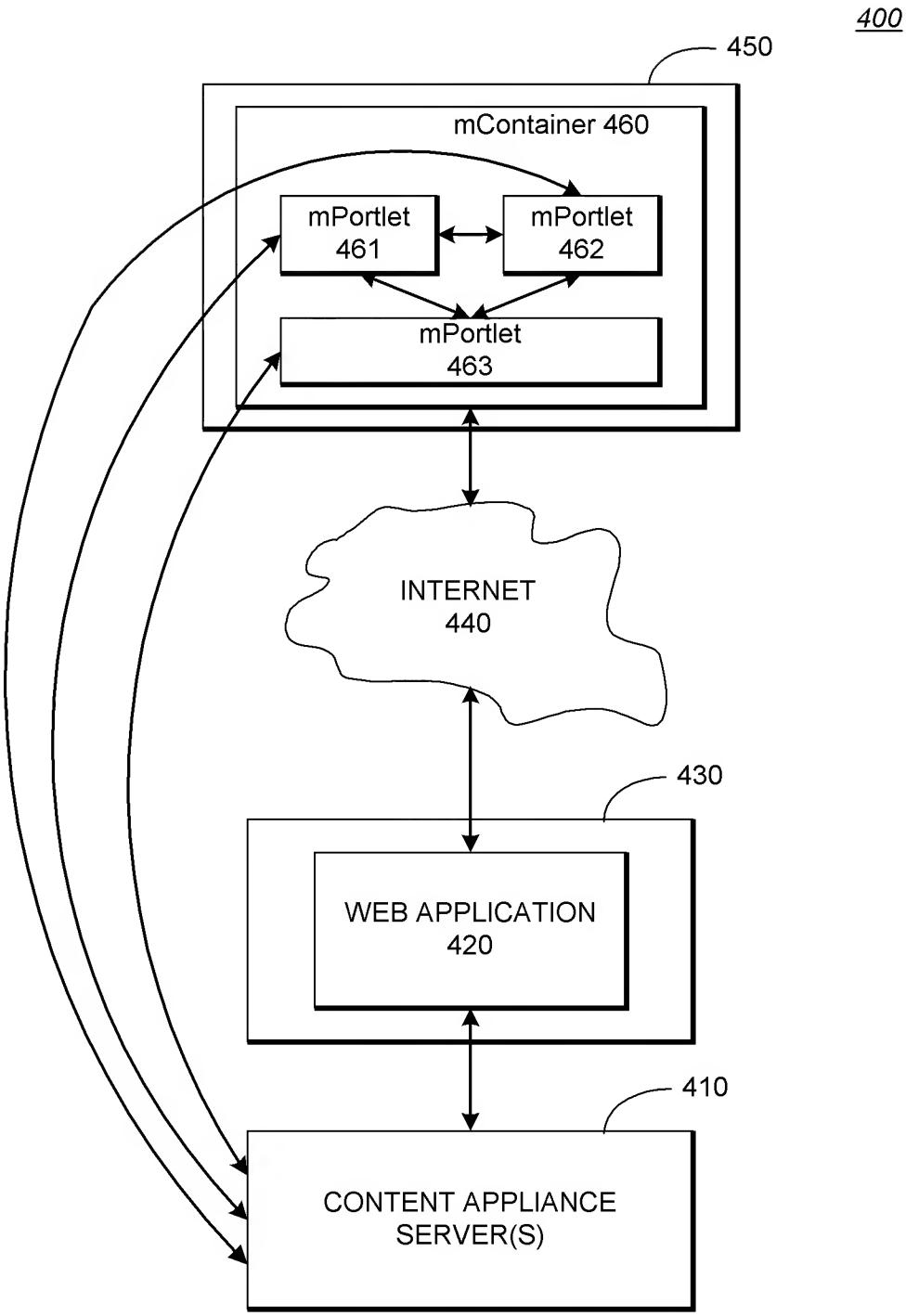
400
450
mContainer 460
mPortlet 461
mPortlet 462
mPortlet 463
INTERNET 440
430
WEB APPLICATION 420
410
CONTENT APPLIANCE SERVER(S)

FIG. 4

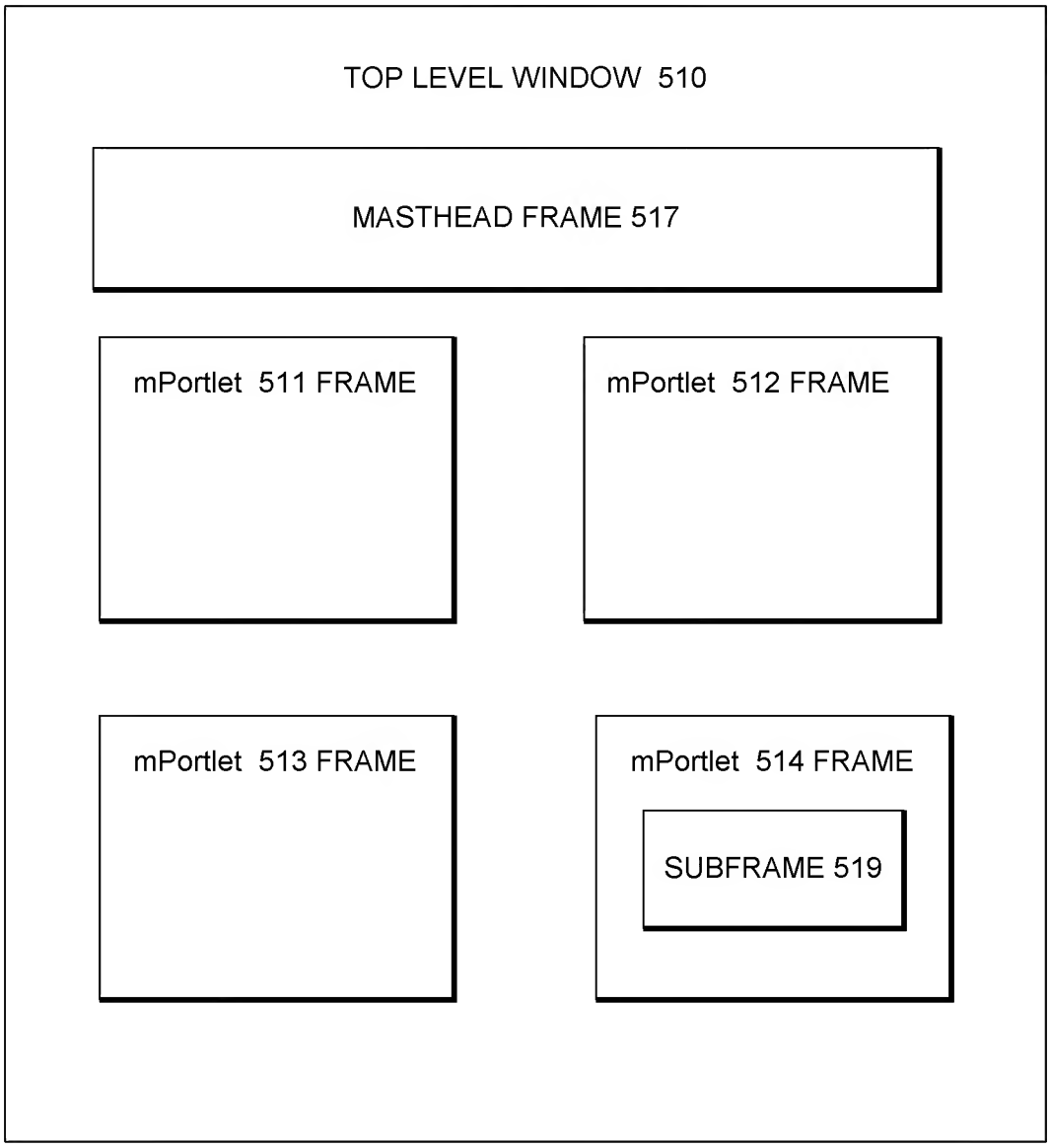
TOP LEVEL WINDOW 510
MASTHEAD FRAME 517
mPortlet 511 FRAME
mPortlet 512 FRAME
mPortlet 513 FRAME
mPortlet 514 FRAME
SUBFRAME 519

FIG. 5A

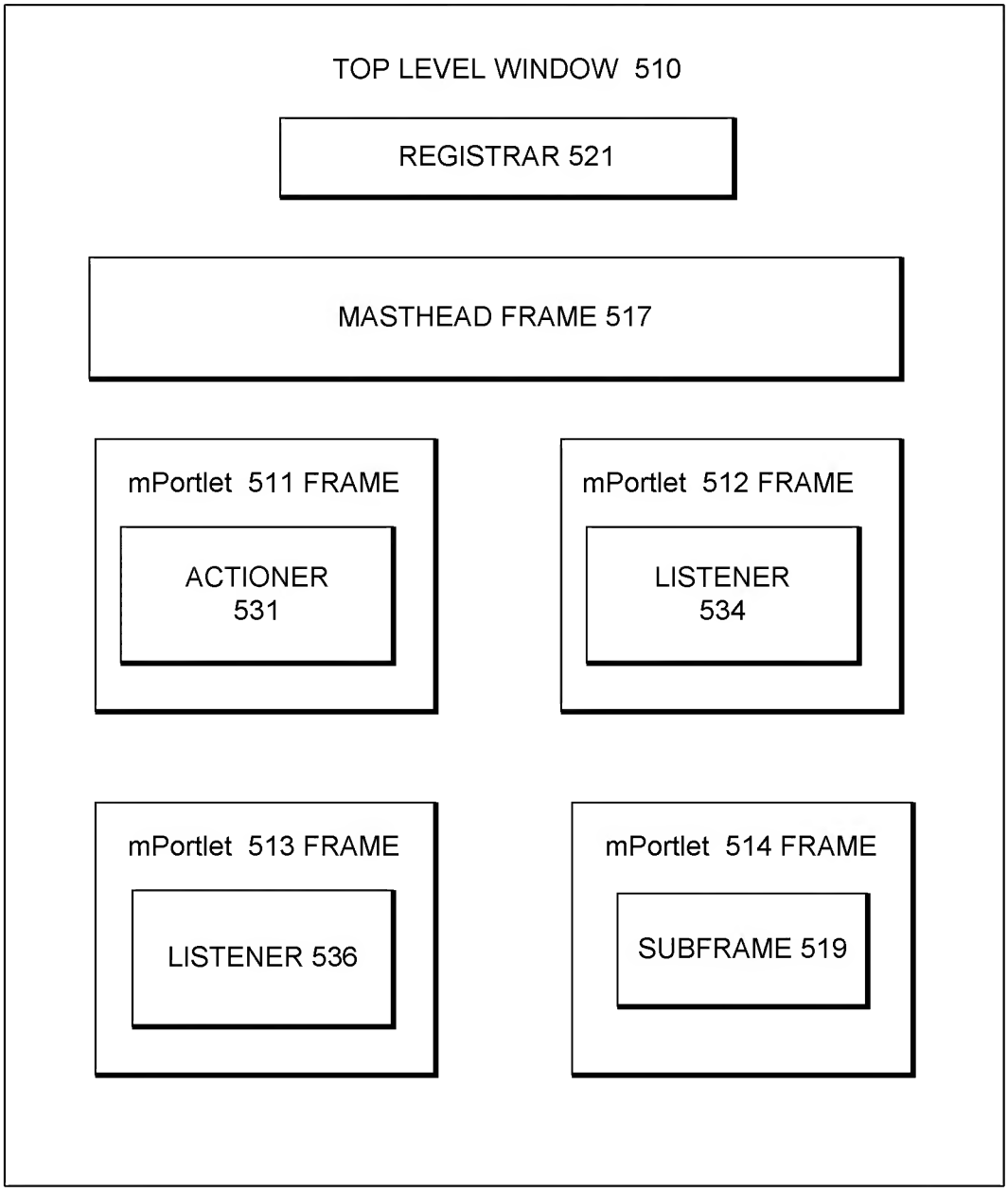
TOP LEVEL WINDOW 510
REGISTRAR 521
MASTHEAD FRAME 517
mPortlet 511 FRAME
ACTIONER 531
mPortlet 512 FRAME
LISTENER 534
mPortlet 513 FRAME
LISTENER 536
mPortlet 514 FRAME
SUBFRAME 519

FIG. 5B

600

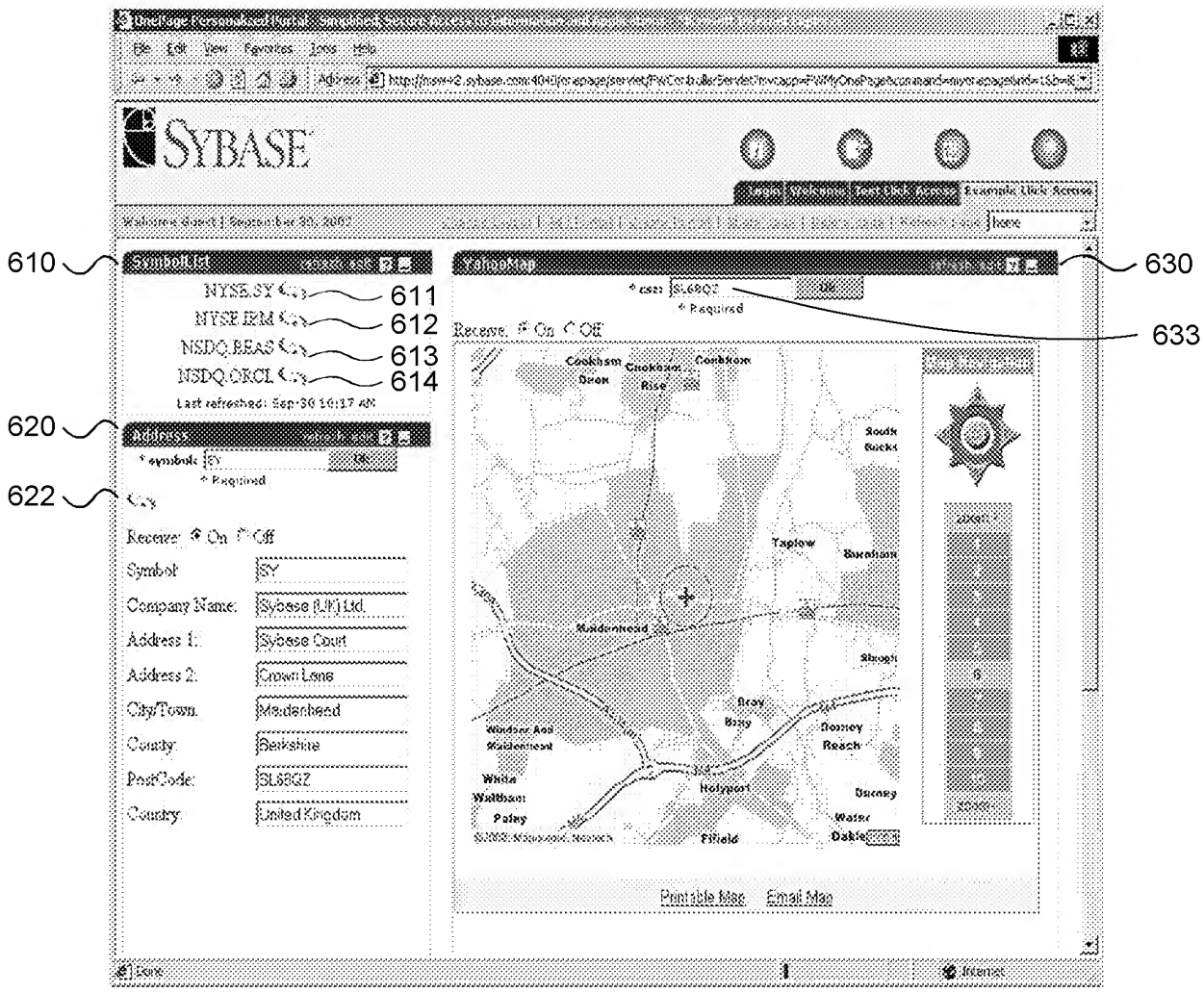
610
611
612
613
614
620
622
630
633
SYBASE
NYSE:SY
NYSE:IBM
NSDQ:BEAS
NSDQ:ORCL
Symbol
Company Name:
Address 1:
Address 2:
City/Town:
County:
PostCode:
Country:
Receive: On Off
Printable Map
Email Map

FIG. 6

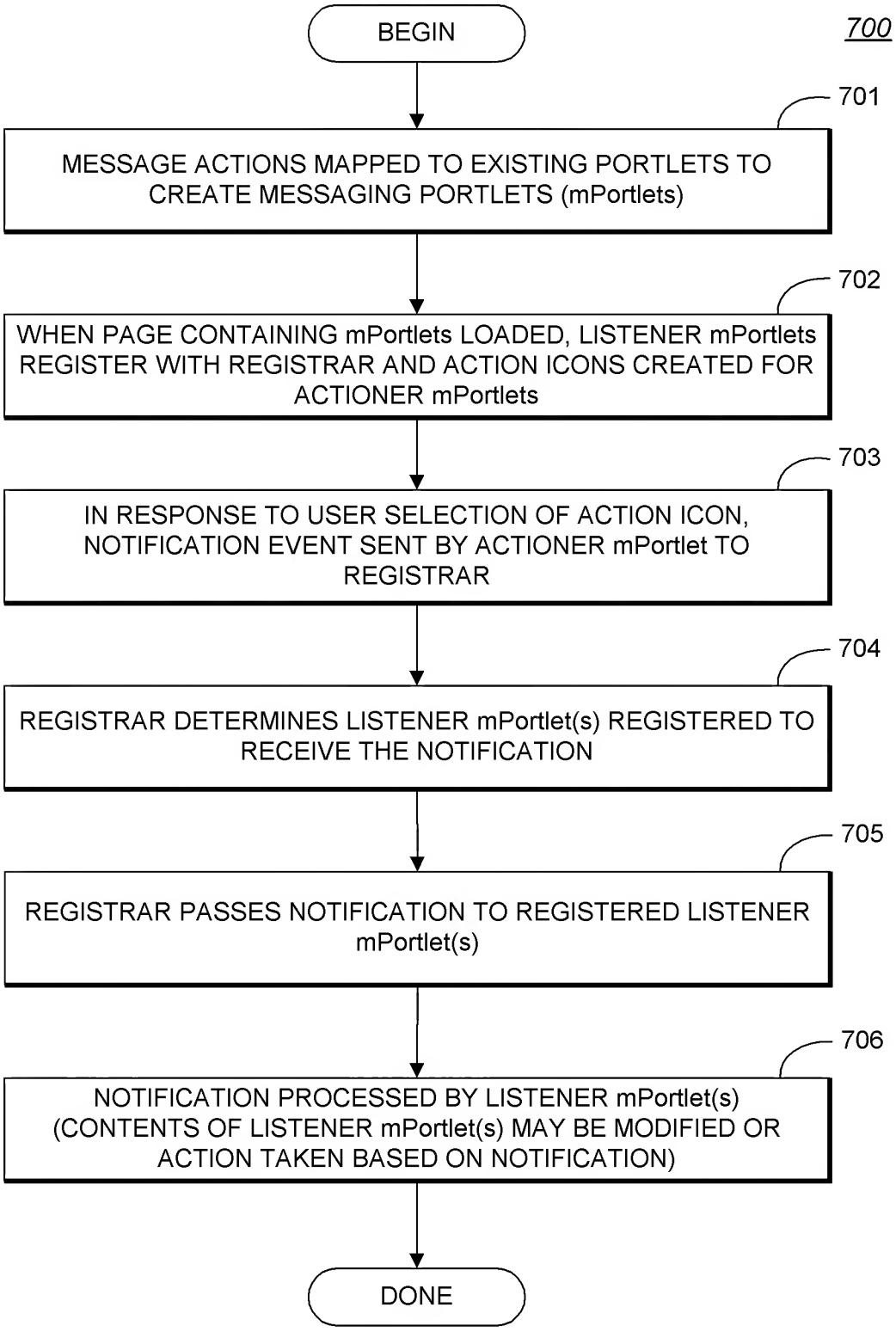
BEGIN
700
701
MESSAGE ACTIONS MAPPED TO EXISTING PORTLETS TO CREATE MESSAGING PORTLETS (mPortlets)
702
WHEN PAGE CONTAINING mPortlets LOADED, LISTENER mPortlets REGISTER WITH REGISTRAR AND ACTION ICONS CREATED FOR ACTIONER mPortlets
703
IN RESPONSE TO USER SELECTION OF ACTION ICON, NOTIFICATION EVENT SENT BY ACTIONER mPortlet TO REGISTRAR
704
REGISTRAR DETERMINES LISTENER mPortlet(s) REGISTERED TO RECEIVE THE NOTIFICATION
705
REGISTRAR PASSES NOTIFICATION TO REGISTERED LISTENER mPortlet(s)
706
NOTIFICATION PROCESSED BY LISTENER mPortlet(s) (CONTENTS OF LISTENER mPortlet(s) MAY BE MODIFIED OR ACTION TAKEN BASED ON NOTIFICATION)
DONE

FIG. 7

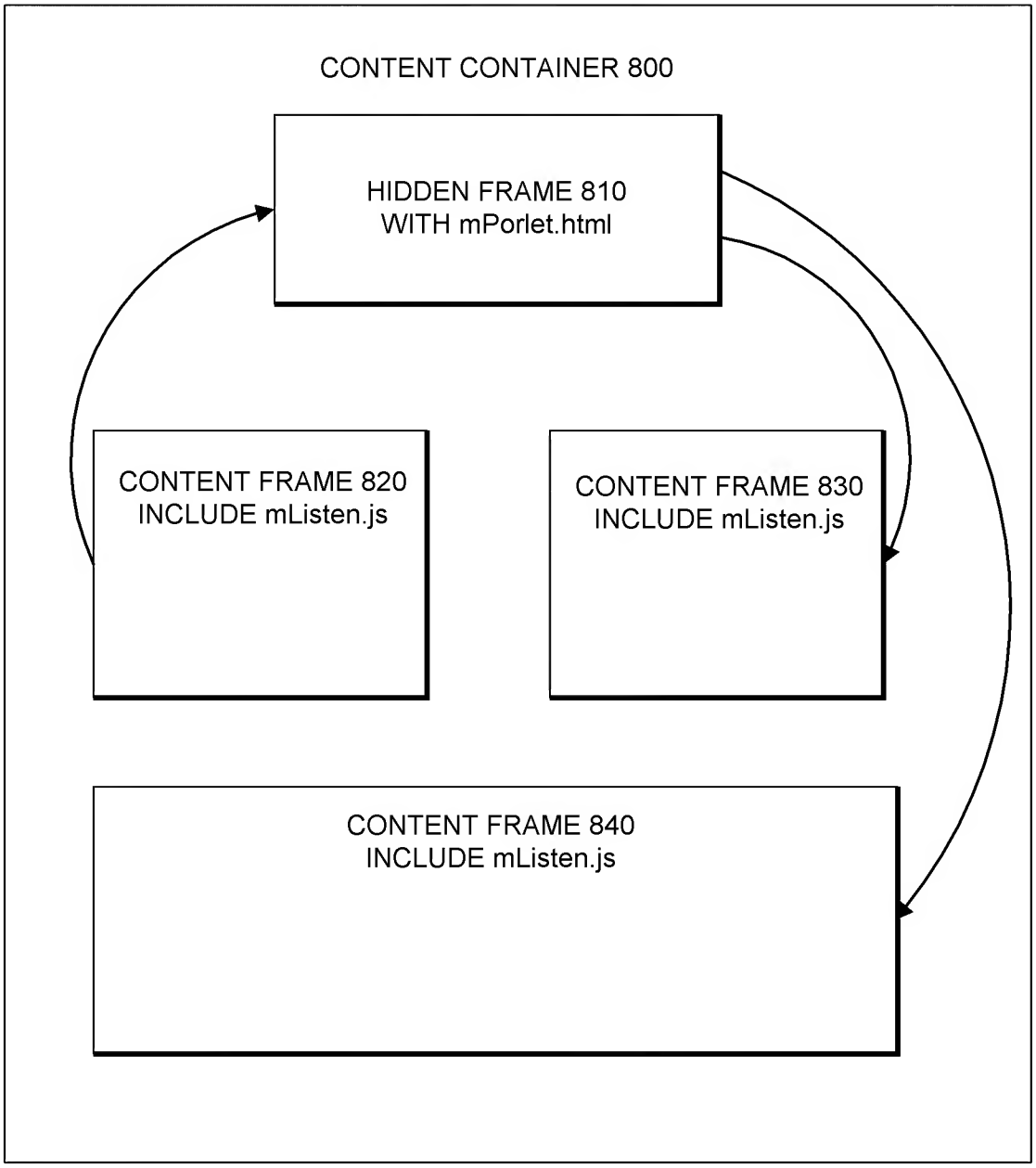
CONTENT CONTAINER 800
HIDDEN FRAME 810
WITH mPorlet.html
CONTENT FRAME 820
INCLUDE mListen.js
CONTENT FRAME 830
INCLUDE mListen.js
CONTENT FRAME 840
INCLUDE mListen.js

FIG. 8